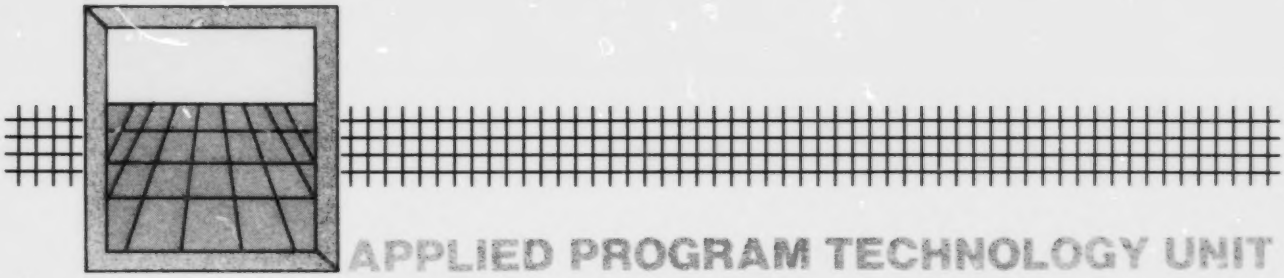
Ontario
Ministry of
Community and
Social Services

Honourable John Sweeney
Minister

December 1986

EVALUATION OF AN EMERGENCY RESPONSE SYSTEM BASED AT RAINYCREST HOME FOR THE AGED



APPLIED PROGRAM TECHNOLOGY UNIT

Report of a
Demonstration Project

AN EMERGENCY RESPONSE SYSTEM

AT

RAINYCREST HOME FOR THE AGED

PORT FRANCES, ONTARIO

Program Technology Branch
Ministry of Community and Social Services
Government of Ontario
December 1986

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Executive Summary

The Rainycrest Home for the Aged in Fort Frances, Ontario, with financial support from the Program Technology Branch of the Ministry of Community and Social Services, implemented and then evaluated the effectiveness of a monitored emergency response system in increasing independence for elderly persons. The purpose of the project was to demonstrate the technology in a rural setting within a range of services for the elderly. The project was not intended to be a rigorous scientific study.

The emergency response system consisted of a remote transmitter (a pendant or pager), which an elderly person could trigger in case of an emergency or fall. Once triggered, the transmitter would signal a unit attached to the telephone to call the emergency response centre. The response centre would receive a code indicating which subscriber had called and immediately phone the subscriber. If the subscriber answered the phone, staff at the response centre would discuss the problem and arrange for an appropriate response. If the subscriber did not respond, the response centre would immediately call one of the individual's neighbours, relatives or friends who had agreed to act as a "responder" in an emergency. The responder, who has a key to the subscriber's home, would go immediately to the scene and either assist the elderly person or call the response centre to arrange for emergency personnel. If staff at the response centre were unable to reach a responder, they would call emergency personnel who would proceed to the scene.

Implementation of the emergency response system involved: selecting appropriate emergency response equipment, hiring and training staff to monitor the emergency response centre at the Rainycrest Home for the Aged, recruiting elderly persons to use the system and to act as part of a control group, installing

the equipment in participants' homes and teaching participants to use the equipment, recruiting and training responders, and maintaining ongoing liaison with police, fire fighters and other emergency personnel in the community.

Evaluation consisted of a questionnaire administered to the 29 subjects and to the 21 members of the control group at the time that the emergency response system was installed and again three months later. The questionnaire was designed to quantify the attitudes of the elderly persons towards living alone, their need for support, and the impact of health problems on their ability to maintain their independence. Rainycrest staff also collected anecdotal information on the system.

Responses to the questionnaire indicated that the emergency response system can be a valuable technological tool in:

- providing emergency assistance to elderly people
- increasing peace of mind / decreasing anxiety, and
- enhancing independence.

The three month evaluation period was not long enough to measure the ability of the system to respond to emergencies or to delay institutionalization. However, subsequent monitoring indicates that the average response time to an emergency call is 3.21 minutes.

Based on the evaluation and anecdotal information, Rainycrest staff have concluded that an emergency response system can be effective in enhancing independence if certain elements are in place:

1. The equipment is reliable, functions properly and realizes subscribers' expectations.
2. Staff operating and monitoring the Response Centre maintain close contact with subscribers, and are able to communicate with older people and reinforce the sense of peace of mind and security that is a major benefit of the ERS.

3. Emergency response centre personnel are available to respond immediately to any equipment problems.
4. Subscribers are able to understand and use the system.
5. Responders are willing to become involved and understand their role thoroughly.
6. The community is supportive of the ERS.
7. Careful monitoring of the system and follow-up on subscriber information is done routinely.

The report includes a series of recommendations and detailed instructions that can be used as a guide in setting up an emergency response system.

INTRODUCTION

Increasing physical frailty and declining health can make it difficult for elderly persons to live alone and maintain their independence. Pressure from families, who are concerned about their elderly relatives' health and their ability to manage independently, can add to the elderly persons' anxiety.

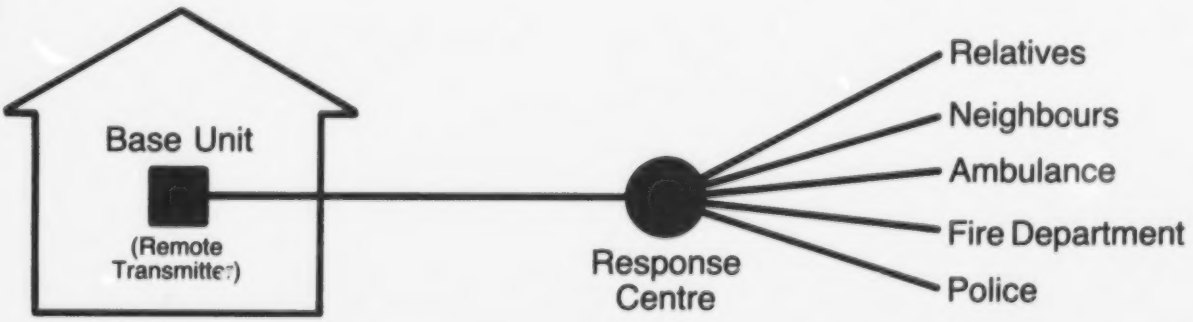
In spite of the increased difficulties with daily living activities that they may experience, many elderly people would prefer to remain independent. They find it difficult to give up control over parts of their lives simply because age makes them vulnerable to accident or ill health. They move reluctantly either into family members' homes or into nursing homes. Depending on where the elderly person lives, he or she may have to move a long distance and lose contact with friends and neighbours. In those cases, loss of independence is accompanied by loneliness and isolation.

In response to the desire of elderly persons to remain independent, the social service system has been working to develop alternatives to institutionalization. The Ministry of Community and Social Services has been exploring the potential of technology to help elderly persons stay in their homes, enjoy a better quality of life and continue to be active members of their communities.

BACKGROUND

One of the greatest barriers to elderly persons living alone is the fear of falling or becoming ill and being unable to call for assistance. An emergency response system (ERS) is a technology that allows a person - in case of an emergency - to trigger a device which will, in turn, trigger the phone to call automatically for help.

Although there are emergency response systems available which will call directly to police, ambulance or hospital personnel, the most commonly used type is one which signals a central monitoring station with a code number that identifies the location of the emergency. Staff at the station respond by calling the person to confirm that there is an emergency. If they receive either a confirmation or no response, staff then call neighbours or friends (responders) who have agreed to respond to emergencies. If the responders are not available, staff notify emergency personnel (police, fire, ambulance) who proceed immediately to the scene. Help usually arrives in a matter of minutes.



Monitored Emergency Response System

OBJECTIVE

The Applied Program Technology (APT) Unit of the Ministry of Community and Social Services was interested in testing an ERS to demonstrate and evaluate its ability to:

- provide assistance
- increase peace of mind / decrease anxiety
- enhance independence
- delay institutionalization

In order for the ERS to be used and evaluated effectively, the APT Unit recommended that it be implemented within an existing support program for elderly persons. For that reason, Rainycrest Home for the Aged was approached to be the site for the demonstration project. This rural setting was also chosen in order to demonstrate that technology can be employed effectively outside of urban settings, far from sophisticated technological support systems.

Rainycrest Home for the Aged offers institutional care and home support services for elderly persons living within a large geographic area around Fort Frances, Ontario. Rainycrest was already operating an active program of homemakers services, transportation services and a "call-a-day" program to seniors in the region in order to help older people stay in their homes as long as possible.

The project proposal was presented to the Board of Directors at Rainycrest. After a demonstration of the equipment and some discussion about the implications of the project for staffing (which would be required 24 hours a day to monitor the base unit), resources and liability, the Board agreed that Rainycrest would become the site for the demonstration project, and offered staff to manage the program as well as other resources.

METHODOLOGY

1. The ERS Equipment

The ERS equipment used in the Rainycrest demonstration project was selected by the APT Unit, based on an assessment of the various ERS options available in Canada. Criteria for selecting equipment included:

- features
- availability
- servicing/supplier support
- cost

The Unit assessed five different options and selected Insta-Call Services Canada on the basis of cost and local (i.e. Ontario) representation.

(NOTE: The system selected is a generic Response Centre-monitored type of emergency response system. The Government of Ontario should not be construed to be endorsing this particular product. Any decision to purchase similar equipment should include a review of those systems available in the area at the time of purchase since technical features, availability of support and cost can all change dramatically over relatively short periods of time.)

The Insta-Call system consists of the base unit operating at the monitoring or Response Centre and a home unit, attached to the telephone, which can be triggered **either** by a button on the home unit itself **or** by the button on a pendant or pager that can be carried or worn by the user around the house and garden. The signal from the pendant or pager will trigger the home unit up to a distance of approximately 150 feet.

The home unit must plug into a telephone jack and an electric outlet. However, it is equipped with a standby battery - in case of a power failure - which is effective for approximately 20 hours. If hydro power fails, the remote ERS unit will alert the Response Centre.

The pendant or pager is also equipped with a battery; however, the battery is not waterproof. The home unit can be programmed to call the Response Centre automatically once every 24 hours to assure those monitoring the system that the equipment is working properly. This automatic call does not require active intervention by either the subscriber or the Response Centre personnel. It should be noted that, because of the long distance charges and extra expense to the subscriber involved, many of the units installed by Rainycrest were not programmed for this feature.

The cost of the equipment was covered by the APT Unit:

monitor or base unit	$5,300.00
27 home units	$10,665.00
	$15,965.00

Rainycrest paid the following costs connected with the project:

sales tax	$1,117.55
installation	1,000.00
shipping	285.00
travel*	1,500.00
accommodation*	289.90
miscellaneous	85.00
	$4,277.45

*for Insta-Call personnel to travel to Fort Frances to install the equipment.

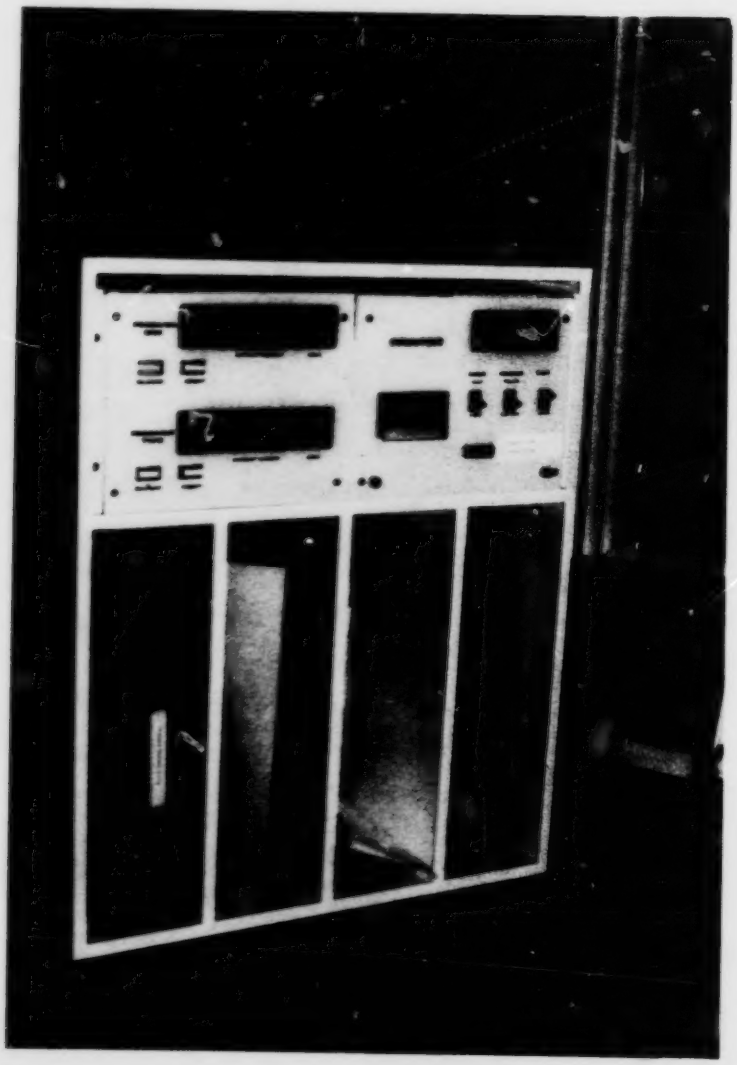
Users of the ERS would incur the following costs:

rental fee	$7.50	per month
jack installation	23.25	(if required)
long distance charges	.56	per call
replacement batteries	1.00	per year

2. Implementation at Rainycrest Home for the Aged

The base unit

The base unit was installed by Insta-Call personnel in the nursing station at the Rainycrest Home for the Aged. A small, compact piece of equipment, it takes up little space and is easy to integrate into an existing office setting. To operate the unit, Rainycrest had to install a dedicated phone line and number. The installation required no significant modification to the existing environment.



Staffing

In order to provide effective emergency response service, the base unit has to be monitored 24 hours a day. Before the project began, Rainycrest did not provide 24-hour receptionist services. In response to the project, the Board of Directors developed a job description for a clerk/receptionist. Duties of the position included monitoring the base unit. Five people were hired and trained to provide this 24-hour service.

In addition, the job description of Rainycrest's Community Home Support Facilitator was expanded to include responsibility for managing the program, developing procedures and protocols, co-ordinating services with users and responders, and supervising staff.

Training

An "alarm procedure" for staff was developed. (See Appendix A.) Personnel from Insta-Call trained Rainycrest staff to operate the system. Each trainee was given the opportunity to respond to "test" emergency calls and to practice with the system until he or she became comfortable using it. In addition, the alarm procedure was posted beside the base unit to guide staff.

It was also the responsibility of base unit staff to test the home units once a month to ensure that they were working properly. Staff were trained in the simple testing procedure of calling the subscribers and asking them to press the emergency button on their pager or pendant, which would ensure that pager and the main unit were both working properly.

3. Implementation into subscribers' homes

Finding participants

Rainycrest advertised the ERS through press releases sent to newspapers and through letters sent to organizations and agencies providing services for the elderly, such as Home Care, municipal offices and senior citizens clubs. (See Appendix B.) Rainycrest's Community Home Support Facilitator spoke at a couple of meetings to promote applications for the program, and two articles appeared in the local newspaper. In addition, employees at Rainycrest distributed information on the ERS.

Selecting participants

To evaluate the program, Rainycrest selected a subject group and a control group from the 50 applications received.

Every applicant was interviewed by telephone and asked the following questions:

- What specific health problems do you have?
- Do you live alone?
- Why do you want an emergency response unit?

The interviewer also explained how the ERS worked and what the charges for having a unit would be.

After learning more about the ERS, some people withdrew their applications. For example, one man had wanted to use the system when he went fishing, and this was beyond the capability of the ERS equipment. Another person, having applied for a unit when she was ill, was now feeling better and no longer wanted one. Some decided against an ERS because of the cost; others had moved. In some cases, children had applied for units for their parents but the parents did not want to use the devices.

Eligibility criteria for receiving a unit were not stringent. However, if the applicant was well and did not have a history of emergencies or health problems, he or she was put in the control group. From the applicants who did have health problems, 29 (average age 81.5) were randomly selected to receive an ERS unit; the remainder were told that they were on a waiting list for units and became part of the control group (average age 79.1).

Of the 29 subscribers who received units, 13 lived in Fort Frances and 14 lived in communities surrounding Fort Frances. The farthest that the system reached was 150 kilometres to Morrison, Ontario.

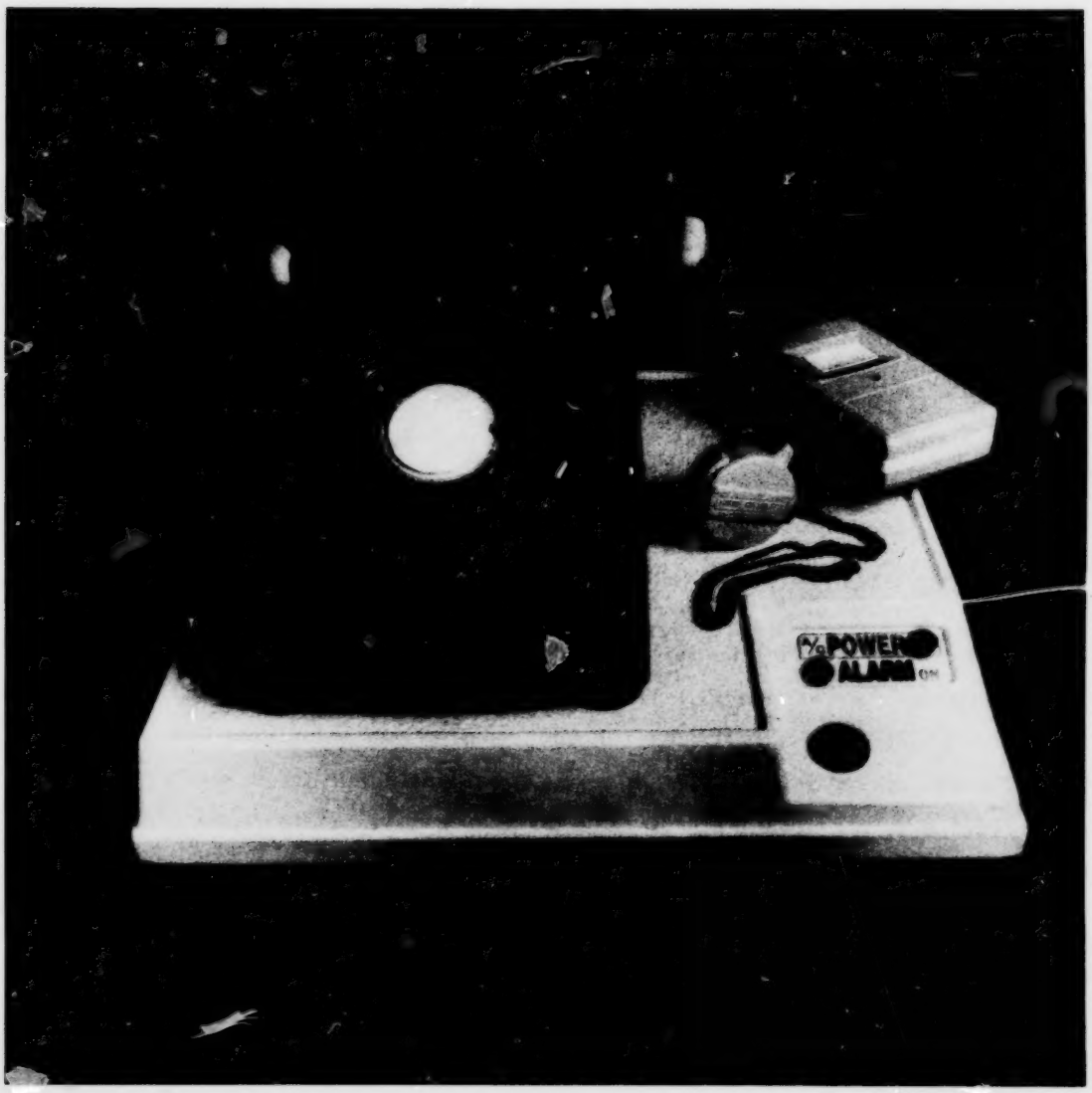
Installing the ERS units

The Community Home Support Facilitator and a representative of the equipment supplier installed the first group of units together. They were able to complete approximately six installations in one day. Each installation took from 45 to 60 minutes and consisted of finding the best possible position for the unit in the person's home, moving furniture (if necessary to ensure easy access to the phone), installing the unit and calling Rainycrest in order to test the unit. Telephone jacks, if required, were installed by Bell Canada. At Bell's request, whenever possible arrangements for the jacks were made by the subscribers. However, in about three-quarters of the cases, the subscribers found it difficult or confusing and the Community Home Support Facilitator made the arrangements for them.

As part of the installation procedure, the subscriber would be asked to use the remote unit in the garden in order to test its range. The Community Home Support Facilitator would also take the time to complete with the subscriber an information card.

The card would record information on the subscriber (health, allergies, etc.) and the names, addresses and phone numbers of the responders. All numbers would later be confirmed at the Rainycrest Response Centre. (See Appendix C. NOTE: Rainycrest omits the questions on medication, ethnic origin and height and weight.)

When the Community Home Support Facilitator installed equipment on her own and administered the evaluation questionnaire (see section on evaluation), the process usually took about two hours.



Educating ERS users

Rainycrest staff would ask that a relative or one of the person's responders be on hand at the time of the installation if possible. By witnessing first-hand the demonstration of the unit and by hearing the installer's explanation, family members would be able to reinforce the procedure with the subscriber or answer any questions he or she might have.

In addition, the person doing the installation would give a detailed demonstration of how the unit worked and would ask the subscriber to trigger the unit so that the person would be comfortable using it later.

The user was told exactly what would happen in case of an emergency. The installer would ask how many times the phone usually rings before the subscriber reaches it and answers, and that number would be recorded on the subscriber information card under the subscriber's phone number. Arrangements would then be made to allow the phone to ring a certain number of times when the Response Centre reacted to an emergency call. The person would be reminded that the remote unit was not waterproof. Subscribers would also be told about the monthly call they would receive from Rainycrest to test the equipment.

The installer would explain again the charges associated with the unit: $7.50 monthly rental charge for the unit, $.56 in long distance charges per call to the Response Centre (where applicable) and $1.00 in new batteries for the remote unit each year. Subscribers who had to have phone jacks installed would also receive a bill from Bell for $23.25.

After the unit was installed, the subscriber sould also receive a letter from Rainycrest that would reiterate everything that had been covered during the installation process. (See Appendix D.) The user was also given a number to call if he or she had any questions or problems.

4. Educating responders

Each subscriber was asked to supply a list of friends, neighbours or relatives who would be willing to respond to an emergency.

Rainycrest's Community Home Support Supervisor would write to each person on the list and ask him or her to contact Rainycrest if he or she was **not** willing or able to be a "responder." The letter would explain how the ERS service worked, describe the responders' role, outline step-by-step what would happen in case of an emergency and ask the responder to notify Rainycrest immediately of any change in address or phone number. The responder was reminded that he or she should have a key to the subscriber's home. (See Appendix E.)

Informing police and other emergency personnel

To ensure that the community's emergency services were aware of the ERS service, Rainycrest wrote to the police on behalf of each subscriber and asked them to act as the final respondent if neighbours or friends were unable to respond. (See Appendix F.)

5. Monitoring the system

Once a month, Rainycrest staff check with each subscriber to test the equipment and make sure it is in working order. The process involves a phone call from the Response Centre to the user's home. The staff person asks the user to hang up the phone and then immediately trigger the alarm button on the pager or pendant. When the emergency call has been received, Rainycrest calls the user back to reassure him or her that the unit is functioning properly.

If the unit is not working properly, staff immediately contact the Community Home Support Facilitator, who will go directly to the subscriber's home to determine the source of the problem. Broken or malfunctioning units are replaced with spare units and sent back to the equipment supplier for repairs.

To monitor the calls and give staff fast, easy access to information on responders, Rainycrest established a file card for each user. The card includes the name, address, phone number and pertinent personal information on the user, along with the list of responders and their addresses and phone numbers. When an emergency call is received, details such as time, the response to the initial call, the calls to responders, the problem (once it has been identified) and other information are noted on the card. This "history" helps Rainycrest staff monitor use of the system and respond more effectively to individual problems.

The card (See Appendix C.) is also used to record the results of the monthly test of the equipment, the dates of visits to the subscriber's home, details about equipment repairs or malfunctions and any other useful information.

The project co-ordinator has also used conversations and visits with subscribers, families of subscribers and responders to monitor response to the ERS.

6. Evaluation

A questionnaire for subscribers was developed to assess perceived and/or objective benefits of the ERS. The questionnaire was kept as brief as practical so that users would be willing to answer it, but many questions involved follow-up to ensure that answers were valid.

The questionnaire was administered twice: first either before or at the same time the ERS was installed and again three months later. The control group also completed the questionnaire twice, three months apart. The first administration of the questionnaire took place during a personal interview in the subject's home; the second was conducted by telephone. Responses were recorded by the interviewer and coded later.

The questionnaire which dealt with questions related to health, emergencies and hospitalization is included in Appendix G.

Some problems in data collection were encountered because of the age of the participants. Some respondents demonstrated unwillingness to answer some questions or anxiety while responding to certain questions. Some were, on occasion, confused and unable to remember details. However, there is no suggestion of any bias in the answers which might result in differences between the two groups.

Of the 50 applicants initially selected, follow-up data were obtained on only 43 of them. Of the seven who were lost, five were in the ERS group and two in the control group: one moved, one cancelled the ERS unit and two died. The other three were not available for retest for unspecified reasons.

RESULTS

1. The ERS Equipment

In general, the equipment has performed well. However, there have been some equipment problems that have directly influenced the ability of the ERS program to provide peace of mind.

For example, initially some units were not functioning properly. If problems occurred at the time of installation and the installers were not able to correct them immediately, the subscriber's confidence in the equipment and the system dropped dramatically. In such cases, Rainycrest staff reported feeling foolish and unprofessional. They also reported difficulty in persuading the subscribers to trust and use the units after such an incident.

The units do not travel well: many were damaged in shipping. In some cases, units sent to the supplier for repairs would be damaged on their return to Rainycrest and have to be shipped again for repair. Rainycrest staff reported frustration with the time and delay involved in shipping and equipment repair.

A number of equipment problems were caused by external factors beyond the control of Rainycrest or the equipment supplier. For example, a number of units started malfunctioning, dialing in false alarms. Investigation of the problem indicated that units were being activated by local radio transmissions. The recalibration or recoding of the units to deal with this problem required a certain degree of technical skill and was done by an individual with a working knowledge of electronics.

In another incident, a pulp wood truck ran into a telephone pole and disconnected the line to one of the ERS units. Once disconnected, the unit would ring every hour on the hour; the subscriber lived with the alarm sounding for approximately 24 hours until the telephone line was reconnected. As soon as the line was restored, the alarm sounded at the Response Centre and Rainycrest staff became aware of the problem. In another case, a unit began to dial in a number of false alarms, triggered by the subscriber's pendant. Investigation indicated that the pendant had been accidentally soaked with water, which was the likely cause of the malfunction. Modifications are currently underway to make the pendant waterproof, removing one potential cause of equipment failure.

Rainycrest staff reported that subscribers found the pendant somewhat awkward and generally preferred the paging device.

Connection to the phone lines also posed certain problems. Several potential subscribers who lived in rural areas were on party lines: some two to a line, some four to a line. Only subscribers who were two to a line were eligible for an ERS. In those cases, Rainycrest would contact the other person on the party line and explain the ERS system. The other party was told that they might occasionally pick up the receiver and hear some regular dialing or coding on the line: if they did, it was the ERS and they should hang up.

For some subscribers, the telephone charges of the ERS were a problem. For those subscribers living a long distance call away from Rainycrest, every call to the Response Centre would incur long distance charges. To keep the costs down, the ERS monitoring feature that checked the home unit once every 24 hours was disconnected. While this change helped to control the expense of the unit, it limited the effectiveness of the system. In addition, for some subscribers, the charge of $23.25 to have a telephone jack installed was a hardship.

Rainycrest staff reported that, once the units were installed and the system up and running, interest in the ERS within the community increased. A number of elderly people expressed some interest in purchasing their own unit and tying into the Rainycrest Response Centre.

2. Implementation at Rainycrest Home for the Aged

Rainycrest reported that implementation of the Response Centre went very smoothly. The base unit is monitored 24 hours a day, and staff find the equipment easy to use and the established procedures easy to follow. They reported that the training was adequate and helpful.

Evaluation of the demands of the Response Centre indicated that it did not dramatically increase workloads. There have been few actual emergencies. Certain amounts of time are required for the monthly testing of the equipment. Installation also requires one to two hours per subscriber, plus the time involved in contacting responders and setting up records. Careful attention must also be paid to staying in touch with subscribers. In one case, a subscriber moved and the address on the card at the Response Centre wasn't changed. When an emergency was signalled, the ambulance was sent to the wrong address. The individual running the ERS must be aware of any changes.

While the ERS does not require a lot of time, it does demand flexibility. If there is a problem with a unit, or if a subscriber calls with some concern, a person must be available to respond immediately. A fast response to any situation helps to reassure subscribers about the effectiveness of the ERS; it is also essential to protect the Response Centre against legal action. If an emergency occurred and the unit did not function properly, the organization operating the Response Centre could be held liable. This would be particularly true if the Response Centre had been aware of an equipment problem and had not dealt with it immediately.

Problems reported by staff included the frustration of dealing with the initial batch of false alarms.

3. Implementation into subscribers' homes

Except for problems with faulty equipment, implementation of the home units went quite smoothly.

ERS staff noted that some subscribers understand and are able to handle the home units easily; others are not. In order to qualify to receive a unit, the subscriber should be able to understand the instructions and operate the unit. Rainycrest staff also reported that they carried on an informal, ongoing assessment of each subscriber's ability to use the unit. At the point at which a subscriber could no longer operate the ERS, Rainycrest would recommend that it be removed and alternative arrangements be made for the individual. The system for emergency response is only effective if used correctly.

Most subscribers used the equipment appropriately; others have had problems through either misplacing the remote devices or getting them wet. One subscriber accidentally disconnected the unit attached to the phone; another knocked the battery out of the pager. Rainycrest staff reported that the subscriber's understanding and use of the system generally was better if another family member or a neighbour was present when the equipment was installed.

Subscribers appreciate and seem to need the reassurance of the regular contact with Rainycrest staff and the Response Centre.

Most of the subscribers have reported in conversation that they are pleased with the ERS. Only one had it taken out because she felt she didn't need it.

ERS staff reported that families of the subscribers are particularly supportive of the system, and often are the ones who persuade the elderly person to become a subscriber.

4. Educating responders

Rainycrest noted that the responder system has worked extremely well. People are willing to act as responders and, in almost all emergencies to date, the Response Centre has been able to reach a responder. This has been due to the fact that Rainycrest has insisted on at least three or four responders for each subscriber.

Police and other emergency personnel have also been very supportive of the ERS. However, during the early stages of implementation - when false alarms were a problem - emergency personnel in one community did become a bit skeptical of the value of the system.

5. Monitoring the system

Response Centre staff have sometimes found the regular monthly testing of the home units difficult. In some cases, the subscribers didn't seem to be able to follow the instructions or understand what was being asked of them. In other cases, they were unable to find the pendant or paging unit and didn't want to admit it. Instead, they would lead the caller to believe that the system wasn't working, and someone from Rainycrest would go to the home only to discover that the remote unit had been misplaced.

The ERS co-ordinator also reported delays and problems in repairing and shipping units.

All emergencies reported through the system have been handled smoothly and without incident. The average response time for an emergency was 3.21 minutes. (A summary of the emergencies, complete with response and outcome is included in Appendix H.)

The file card on each subscriber was considered an extremely effective means of maintaining an accurate record on subscribers, emergencies and other information on the ERS.

6. Evaluation

The formal evaluation was conducted over a three month period. During that time, only four users experienced emergencies and only two of those individuals actually used the ERS. One of the two who used the ERS was hospitalized as a result of the emergency, the other was helped at home. This small number of incidents is not a significant amount to evaluate the effectiveness of the ERS in responding to emergencies. However, the results of the responses to the questionnaire did indicate differences in perceptions and attitudes between subscribers and members of the control group - differences that can be attributed to the ERS.

Researchers reported that some of the elderly people interviewed for the evaluation had difficulty understanding some of the questions. Others became very nervous and anxious when asked to answer certain questions. Some participants were confused and unable to remember details. In spite of these limitations, researchers felt that the majority of the questions were answered well.

In general, subscribers tended to be more confident and self-reliant, and to worry less about emergencies. The major benefit of the ERS seemed to be an increased sense of security: about three-quarters of those individuals who were given a unit reported that it gave them peace of mind or reduced their worries. Over the three month period, there was a marked increase in the number of ERS users who reported never worrying about accidents or emergencies (from 41% to 58%) while members of the control group tended to worry more. Fewer individuals with an ERS reported an emergency over the three-month period. This finding may indicate that either subscribers were more relaxed so there were fewer incidents, or that the individuals were less likely to label an incident an emergency.

While the number of people in the ERS group who had considered moving out of their homes into a residential facility did increase, the number of people in the control group who had considered such a move increased even more. There was also a smaller increase in the number in the ERS group who thought they would be hospitalized over the next few months.

Responses indicated that those people who had an ERS unit became more independent. While 50% of the ERS group had originally reported that they had someone looking after them "always or most of the time", after three months with an ERS unit, only 39% reported that someone was still looking after them. In the control group, over the same period, the number being looked after rose from 27% to 45%. This finding may indicate that the presence of the ERS provided reassurance to both caregivers and the user of the unit that help would be available if needed.

Detailed results of the questionnaire are included in Appendix I.

CONCLUSIONS

Based on the experience of installing and operating the system and on the formal evaluation, Rainycrest staff and the independent researchers concluded that an emergency response system can be a valuable technological tool in:

- providing emergency assistance to elderly people
- increasing peace of mind / decreasing anxiety, and
- enhancing independence

The project has not been in place long enough to determine whether or not the ERS will delay institutionalization.

However, those involved in the demonstration have concluded that the equipment and technology itself is only one aspect of offering an effective ERS service. For the ERS to provide the benefits of peace of mind, independence and assistance, certain elements must be in place:

1. Equipment must be reliable, function properly and realize subscribers' expectations.

As one of the main purposes of the ERS is to reassure subscribers and ease their anxiety about living alone, equipment problems can be extremely damaging.

2. Staff operating and monitoring the Response Centre must maintain close contact with subscribers, and be able to communicate with older people and reinforce the sense of peace of mind and security that is a major benefit of the ERS.

Personal contact is an important component of the ERS. Due in part to their age and their health problems, elderly people using the ERS need encouragement and regular contact.

3. ERS personnel must be available to respond immediately to any equipment problems.

A fast response is essential to maintain confidence in the system and to cover the organization's liability in case of accident or emergency.

4. Subscribers must be able to understand and use the system.

Anyone given an ERS unit must be capable of understanding how to use it. Otherwise, it offers no benefits and may hinder the individual from getting the support that he or she may need.

5. Responders must be willing to become involved and must understand their role thoroughly.

The ERS relies heavily on the good will and skill of friends and neighbours. Not only can they provide assistance quickly, but because they are known to the subscriber, they can probably help ease any anxiety the person may be feeling.

6. The community must be supportive of the ERS.

An organization offering an ERS will need the co-operation of police and other emergency personnel, a good working relationship with the phone company and liaison with other agencies providing services for the elderly.

7. Careful monitoring of the system and follow-up on subscriber information is essential.

To offer an effective ERS service, an organization must maintain equipment in working order and keep up-to-date records on all subscribers. Any failure in equipment or information would jeopardize the ability of the system to respond to emergencies.

RECOMMENDATIONS

Based on their experience and the results of the evaluation of the demonstration project, those involved in the Rainycrest ERS offer the following recommendations to anyone establishing an ERS.

1. Equipment

- Evaluate available systems thoroughly before making a purchasing decision.

- Arrange to have a number of back-up units on hand to replace malfunctioning units.

- Test all units before installing them in a subscriber's home.

- Whenever possible, arrange for someone locally to handle equipment repairs. (This will help avoid delays and problems in repairs and shipping.)

2. Response Centre

- Train staff thoroughly in the operation of the system.

- Select only staff who are able to communicate easily with older people. (Some people do not have the patience that will be required in going over instructions and supporting the subscribers.)

- Establish an extensive set of procedures and forms that will standardize the operation and provide fast and easy access to necessary information.

- Ensure that someone is available to respond immediately to any equipment problems or failures.

3. Subscribers

- Provide units only to those subscribers who are capable of understanding and using them.

- Allow enough time to explain the system thoroughly to each subscriber.

- Whenever possible, involve other family members, friends or neighbours in the process of installing the ERS unit.

4. Responders

- Have a minimum of three or four responders for each subscriber.
- Ensure that each responder understands the system.
- Ensure that each responder has a key to the subscriber's home.
- Maintain regular contact with police and other emergency personnel.

5. Monitoring the system

- Institute a regular system of testing the equipment.
- Maintain complete records of all emergencies and the responses.

Emergency Response System technology offers a great potential in providing older people with peace of mind and access to help in case of an emergency. By providing that assistance, it also has the potential to increase independence and allow elderly people to live in their homes, on their own, longer. It may also ease anxiety and increase peace of mind for family members.

The danger intrinsic in this type of application of technology is that it will be seen as a substitute for personal contact and attention. The experience of the Rainycrest demonstration project indicates clearly that ongoing, personal contact is an essential component of the ERS. Rainycrest staff did not feel that families of subscribers were visiting less because of the installation of the ERS. However, they are aware of the potential problem and are monitoring it to ensure that the technology does not become a substitute for family concern and support.

Further study will be required to determine whether or not the technology can actually delay institutionalization.

A P P E N D I X A

ALARM PROCEDURE

ALARM PROCEDURE

1. PRESS SILENCE BUTTON.
2. CHECK THE SUBSCRIBER NUMBER.
3. CHECK THE CODE NUMBER (A CODE 2 ALARM OCCURS WHEN THE PORTABLE HELP BUTTON HAS BEEN PUSHED).
4. PUSH RESET BUTTON.
5. IMMEDIATELY TELEPHONE THE SUBSCRIBER.
6. LET THE TELEPHONE RING THE NUMBER OF RINGS INDICATED ON THE SUBSCRIBER INFORMATION CARD.
7. IF THERE IS NO ANSWER, CALL THE FIRST RESPONDER.
8. CONTINUE TO TELEPHONE RESPONDERS UNTIL YOU GET ONE WHO CAN ACT AT ONCE.
9. ASK THE RESPONDER HOW LONG IT WILL TAKE TO REACH THE SUBSCRIBER'S HOME.
10. TELL THE RESPONDER TO PUSH THE GREEN RESET BUTTON ON THE HOME UNIT AFTER ARRIVING.
11. ADVISE THE RESPONDER THAT YOU WILL THEN TELEPHONE BACK.
12. WHEN THE CODE 7 RESET SIGNAL IS RECEIVED, CALL THE SUBSCRIBER'S HOME.
13. ASK FOR AS MUCH INFORMATION AS POSSIBLE.
14. SUMMON APPROPRIATE HELP IF NECESSARY.
15. COMPLETE ALL FORMS.

A P P E N D I X B

PROMOTIONAL MATERIALS

RAINYCREST BOARD OF MANAGEMENT ANNOUNCES EMERGENCY RESPONSE SYSTEM FOR DISTRICT SENIORS

by

Catherine Shaw

In its endeavour to promote community based independent living for the district's senior citizens, Rainycrest Board of Management is pleased to announce E.R.S., an Emergency Response System designed to provide help at the push of a button. Persons can signal the need for help without ever having to reach a phone!

Here's how it works. Subscribers are provided with a base unit and a remote transmitter. This transmitter can either be carried attached to a belt, or worn as a pendant. In the event of an emergency, the user must simply press the transmitter to signal for help. The message is then automatically transmitted through the base unit to Rainycrest's Emergency Response Centre, monitored on a 24 hour basis. Within seconds help will be arranged.

Action Plan . . .

Staff at the Response Centre will jump into action, first checking on the individual by telephone. If there is no answer, they will contact the person (perhaps a friend or neighbour) or institution personally designated by the user.

E.R.S. is ideal for elderly persons who worry about having an emergency such as a fall. For those living alone, help may otherwise be hours away.

The project, created by the Ministry of Community and Social Services, Applied Technology Unit is a demonstration carefully evaluated with emphasis on their usefulness in prolonging independent living. Today's aging population, the high cost of institutionalization and individual feelings of loneliness, isolation and the loss of control often experienced when faced with institutional care have all made such community based alternatives desirable.

A limited number of units are available for a low monthly rental fee. Rainycrest will offer the units at a fee substantially lower than ordinarily charged by commercial vendors.

Interested seniors or families are asked to contact Catherine Shaw or Fred Whitehead at Rainycrest Home (274-9858). Inquiries are also welcome. All Applications may not receive a unit as numbers are limited. More units will be circulated as they become available.

A limited number of units are available for a low monthly rental fee. Rainycrest will offer the units at a fee substantially lower than ordinarily charged by commercial vendors.

Interested seniors or families are asked to contact Catherine Shaw or Fred Whitehead at Rainycrest Home (274-9858). Inquiries are also welcome. All Applications may not receive a unit as numbers are limited. More units will be circulated as they become available.

RAINYCREST
DISTRICT HOME FOR THE AGED
Phone (807) 274 9858
450 Home Street, Fort Frances, Ont. P9A 1X3

Janaury 25, 1985

Mrs. Charlotte Mallory
Director, Northwestern Home Care
Program - Fort Frances
324 Church Street
Fort Frances, Ontario
P9A 1E1

Dear Dede:

Re: Rainycrest Emergency Response System

Enclosed please find information on E.R.S. - the Emergency Response System.

We encourage all those who would find such a unit helpful to apply. However, all applicants will not receive a unit. Emphasis will be placed on individuals who, because of their age and general condition of health, may actually require some form of emergency service during the next 6 months. Once all eligibile, high risk people have been identified, one half will be selected at random to receive the units. The other half will constitute the control group, individuals with similar characteristics who do not receive the units. This group is a necessary component in evaluating the project's usefulness in delaying institionalization. They will be first in line to receive the units once more are available.

Applicants can initially submit their name, address, phone number, date of birth and contact person if necessary. They will then be personally contacted and interviewed.

An information brochure will soon be available with a tear-off section for applications. I would appreciate your assistance in distributing these brochures to those who you feel would find such a device helpful.

. . . 2

Thank you.

Sincerely,

Catherine Shaw,
Community Home Support Facilitator.

CS/je
Encl.

cc - Mrs. Ann Amundson
Mrs. Marilyn Morrisette
Mrs. Sheila Moulton
Mrs. Wendy Judson

RAINYCREST HOME FOR THE AGED PRESENTS.....

Tear and Mail to:

Rainycrest Home for the Aged
450 Home Street
Fort Frances, Ontario
P9A 1X3

E R S

....an Emergency Response System, a way of signalling for help without ever reaching your phone

HOW DOES IT WORK?

The system includes both a base unit, connected to Rainycrest's Response Centre and a remote transmitter-can either be carried or worn as a pendant. In an emergency you can call for help simply by pressing the transmitter button. The message is then automatically trasmitted to Rainycrest's.

Emergency Response Centre is monitored on a 24 hour basis.

ACTION PLAN

Staff at the Response Centre first check on you by telephone. If there is no answer, they will contact the person or agency personally designated by the user.

Help will be arranged within minutes.

AVAILABLE...

To elderly residents of the Rainy River District for a low monthly rental fee.

All applicants may not receive a unit as supplies are limited. More units will be circulated as they become available

I am interested in an Emergency Response Unit. Please contact me with further information.

NAME_____

DATE OF BIRTH_____

ADDRESS_____

TOWN_____

PHONE NUMBER_____

CONTACT PERSON IF BIFFERENT FROM ABOVE:

_____

A P P E N D I X C

SUBSCRIBER INFORMATION CARD

SUBSCRIBER INFORMATION CARD

NAME	ADDRESS	PHONE	ACCOUNT NO.

DIRECTIONS TO HOME

RESPONDERS		REMARKS
NAME ADDRESS ACCESS	PHONE	
NAME ADDRESS ACCESS	PHONE	
NAME ADDRESS ACCESS	PHONE	
NAME ADDRESS ACCESS	PHONE	
NAME ADDRESS ACCESS	PHONE	

EMS	POLICE	FIRE

MEDICAL PROFILE and DATA

DATE of BIRTH	AGE	MALE	FEMALE	HEIGHT	WEIGHT	ETHNIC ORIGIN	AMBULATORY

MEDICATION

ALLERGIES

DISABILITIES

REMARKS

PHYSICIAN

PHYSICIAN

HOSPITAL

PHARMACY

NOTIFICATION (next of kin)

OFFICE USE	HOSPITAL or AGENCY
REFERRED BY	
SALES PERSON	PROGRAM DIRECTOR
INSTALLER	ADDITIONAL INFORMATION

A P P E N D I X D

LETTER TO SUBSCRIBER

Rainycrest

550 Home Street, Fort Frances ON, P9A 3T2, (807) 274-9858

Dear

Re: Rainycrest Emergency Response System

We are delighted to provide you with 24 hour Emergency Assistance through the Rainycrest Response System. Many points were covered during the unit's installation. Here are a few of the highlights:

1) The pendant or paget (also called Portable Help Button) is not waterproof.

2) It will require a new battery after about a year.

3) Once a month, someone from our Response Centre will test your unit. They will phone you and ask you to press your Portable Help Button. Hang up the phone after the Help Button has been pressed. The phone line will go dead. Our receptionist will phone you back once the signal has been received.

4) The power supply (or Standby Battery) will take over immediately to provide power to the Response Centre equipment if the normal source of power is interrupted. It will Keep the equipment fuctioning under normal use conditions for about 20 hours.

5) You will be billed $7.50 a month for three months at a time. Those who have purchased their own machines will not be charged a rental fee.

6) A letter explaining the system has been sent to all of your responders.

7) Please contact us immediately with a change of address or telephone number for yourself or a responder.

Sincerely,

Catherine Shaw
274-9858

CS/sb

A P P E N D I X E

LETTER TO RESPONDER

Rainycrest

550 Home Street, Fort Frances ON, P9A 3T2, (807) 274-9858

Dear

RE: EMERGENCY RESPONSE SYSTEM (ERS) for _____

_____has recently had a Rainycrest Emergency Response System installed and has named you as responder, one who would be telephoned to assist in case of an emergency. ERS is a means of signalling for help without reaching a telephone.

Here's how it works!

Each subscriber has a home unit and pendant or paget, called a transmitter. The pressing of this transmitter triggers the Home Unit. The call is then transmitted (via telephone lines) to the Rainycrest Response Centre, monitored on a 24 hour basis.

Staff at our Response Centre will follow up an emergency by first calling the subscriber. (Occasionally it is a false alarm.) If there is no response, they will immediately begin calling responders. Several responders are listed so that our personnel can continue calling if one should not answer. You need not worry if you are not always home, the next responder will be contacted. In each case, the

police have agreed to be the final responder. Most often the responders are neighbours, who can get to the subscriber at once.

As a responder we ask that you:

1. Respond quickly when called, indicating how long it will take you to get there.
2. Help the subscriber.
3. Answer the phone - It will be our staff at the Response Centre following up the emergency.

Most responders are asked to have a house key and encouraged to go look at the device for a clearer picture.

Please notify me at once if you cannot be a responder.

Your assistance is greatly appreciated. Together we can better assure quality care for our seniors living at home.

Sincerely,

Catherine Shaw
Home Support Facilitator

CS/sb

Address: Catherine Shaw
Home Support Facilitator
Rainycrest Home for the Aged
550 Home Street
FORT FRANCES, Ontario
P9A 3T2

Phone: (807) 274-9858

A P P E N D I X F

LETTER TO EMERGENCY PERSONNEL

May 8, 1985

Dear Sir:

Rainycrest's Board of Management recently announced the arrival of the Emergency Response System (ERS). The system enables elderly persons living at home to signal for help, without ever reaching a phone.

The system includes both a base unit and transmitter. The transmitter can either be worn as a pendant or carried. In an emergency, an elderly person can call for help by simply pressing the transmitter button. The call is then transmitted (via telephone lines) to Rainycrest's Response Centre, monitored on a 24 hour basis. Staff at the Response Centre will then follow up the emergency by calling the respondents listed on the subscriber information sheet.

The elderly person (subscriber) can choose to have help from whomever he/she wishes. This will be someone close by, a neighbor or family member within the same community, etc. We require each subscriber have more than one respondent (4 or 5) so that we can continue calling if the first respondent is not home or cannot act at once.

Since we must ensure that at least one of the listed respondents is accessible, we ask that you agree to be listed as the final respondent. In the event of a call from our Emergency Centre, you will be required to go to the subscriber's residence at once. Permission to break in will be given in writing by the subscriber.

In each case the Police will be listed as the last respondent, and to be called only as a last resort!

. . . 2

Similar letters will go out to other Police stations within our District who have subscribers in their area.

We would appreciate your prompt reply to our request and feel that by working together we can keep our seniors safely at home for as long as possible.

Thank you.

Sincerely,

Fred Whitehead,
Administrator.

CS/je

Catherine Shaw,
Community Home Support Facilitator.

Encl.

A P P E N D I X G

EVALUATION QUESTIONNAIRE

Date _____

1. Name _____
2. Address _____

Location: 1 Atikokan
2 Fort Frances
3 Rainy River

3. Phone No. _____
4. Doctor's Name and phone no.

_____

_____

5a. Date of Birth _____

5b. Sex Male [ ] Female [ ]
1 2

6. ERS Recipient? Yes ___ 1 No ___ 2

7a. Living Situation:

House ___ 1
Apartment ___ 2
Other ___ 3 Specify _____

7b. Is there someone who looks after you?

Always ___ 1
Most of the time ___ 2
Occasionally ___ 3
Rarely ___ 4
Never ___ 5

8a. Do you live alone? Yes ___ 1 No ___ 2

If no, describe living companions.

b. Number _____

c. Relationship:

1. Spouse _____ Age ____
2. Extended Family _____ Age ____
3. Friend _____ Age ____

9a. Do you have any chronic or recurring health problems which may require emergency attention?

Yes ____ 1 No ____ 2

b. If yes, describe:

1. Heart condition ____
2. Poor Circulation ____
3. Diabetic ____
4. Arthritis ____
5. Respiratory Problems ____
6. Other ____
7. More than one of the above ____

10a. In the past 3 months, have you had any accidents, health emergencies or other problems where you needed assistance quickly?

Yes ____ 1 No ____ 2

b. If Yes, describe (probe for as many as possible and complete a form for each -- use the attached forms 10b).

10b.

i) Where were you at the time?

1. Home
2. Community
3. Out of Community

ii) Were you alone? Yes ___ 1 No ___ 2

If No, who was with you?

_____

_____

iii) How did you get help and from whom?

1. Family
2. Friend
3. Neighbour
4. Community agency
5. No external source of help
6. ERS

iv) How long did it take for help to arrive?

(best estimate in minutes or hours)

_____

v) What was the outcome? (end result)

1. No assistance required
2. Assisted in home
3. Hospitalized
4. No follow-up

vi) Tell me what happened (emergency)

1. Medical Emergency
2. Burglary

vii) When did it happen (date and time of day, if known)

_____

11. Have you stayed in a hospital, a nursing home or other type of health care facility in the past three months?

Yes ____ 1 No ____ 2

IF YES, describe: (if more than one occurrence in past three months, provide details on all)

Time 1:

Name of Health Care Facility _____

Reason _____

_____

Length of Stay: _____

Time 2:

Name of Health Care Facility _____

Reason: _____

_____

Length of Stay: _____

Time 3:

Name of Health Care Facility _____

Reason: _____

_____

Length of Stay: _____

12a. Have you considered moving out of your present home into a health care facility, or a senior apartment?

Yes ____ 1 No ____ 2

b. If Yes, why?

1. Health
2. Financial
3. Social
4. Other

c. When would you like to move? (In months or years)

1. No longer self sufficient
2. Financially able
3. Lose support system (i.e., family, community)
4. As soon as accepted

13a. Have you formally applied to a home for the aged?
(completed steps) Yes ____ 1 No ____ 2

b. At this time, how do you feel about moving into a home for the aged?

1. extremely necessary
2. moderately necessary
3. somewhat necessary
4. not at all necessary

14a. How often do you worry about having accidents or emergencies?

1. always
2. most of the time
3. occasionally
4. rarely
5. never

b. What kinds of things do you worry about?

1. Health
2. burglary/threat to home & person
3. financial
4. family
5. never worry

15. Who would you be most likely to call if you have an emergency? (Get up to four responses in order of who would be called first)

a. _____
b. _____
c. _____
d. _____

16a. Who visits you most frequently and what are their names (4)?

1. family _____
2. friend _____
3. neighbour _____
4. health care _____
5. other _____

b. How frequently do they visit you?

1. frequent visits by one person
2. frequent visits by more than one person
3. infrequent visits by more than one person
4. infrequent visits by one person

Is there anyone else that visits you once a week or more?

Yes ____ 1 No ____ 2

IF YES, who? _____

_____

17. Does anyone telephone you regularly, if so who and how often?

1. frequent calls by one person
2. frequent calls by more than one person
3. infrequent calls by more than one person
4. infrequent calls by one person

Is there anyone else that phones you more than once a week?

Yes ____ 1 No ____ 2

IF YES, who? (List names) _____

_____

_____

18. In what ways has the Emergency Response System unit been of use to you?

1. immediate response to emergency
2. immediate response to accidental triggering
3. malfunction of the ERS
4. have not used it yet

19. In what ways do you think the Emergency Response System was or was not effective?

1. peace of mind/reduced worry
2. has not formulated an opinion
3. ERS is of no use

20. How likely do you think it is that you will be hospitalized in the next three months?
    1. very likely
    2. somewhat likely
    3. not too likely
    4. not at all likely
    5. would not respond
21. What kind of services does Rainycrest provide?
    1. doesn't know (none)
    2. knows of one service
    3. knows of more than one service
22. What kind of outreach services would you like to see Rainycrest provide?

_____

_____

_____

_____

A P P E N D I X H

SUMMARY OF EMERGENCIES

APPENDIX H

SUMMARY OF EMERGENCIES

Emergencies	Outcomes
1. A subscriber had slipped while transferring from the toilet to her wheelchair.	A visitor in the apartment next door who was familiar with the sound of the alarm responded at once. She lifted the subscriber into her wheelchair and summoned an ambulance.
2. Response Centre responded to an alarm. Since neither the subscriber nor the responders were home, the OPP were called. They forced their way into the home and, when they found no trace of the subscriber in the home, searched around town and located her.	The subscriber had not signalled an alarm. Rainycrest determined that an equipment malfunction caused the alarm to sound.
3. A subscriber was caught between her bed and wheelchair, and signalled an alarm.	Response Centre alerted a responder who assisted the individual.
4. Same as #3.	

5.	A subscriber was having difficulty transferring from her to bed to her wheelchair, and signalled an alarm.	Response Centre alerted a responder who assisted the individual.
6.	A subscriber who had recently undergone a change in medication became confused and signalled for help.	Response Centre responded and sent help. The subscriber would not admit that he had triggered the unit and became angry when help arrived. He was admitted to hospital, and his medication was subsequently changed.
7.	A subscriber who was confined to a wheelchair needed help getting out of bed and signalled an alarm.	Response Centre contacted a responder who assisted the individual.
8.	A subscriber fell in her washroom, became upset and signalled an alarm.	Response Centre contacted a responder who assisted the individual.
9.	A subscriber was unable to transfer from the toilet to her wheelchair, and signalled an alarm.	Response Centre contacted a responder who assisted the individual.

10.	A subscriber felt sick and was experiencing chest pains, and signalled an alarm.	Response Centre summoned an ambulance to assist.
11.	A homemaker arrived at a subscriber's home and found the subscriber slouched over a chair with his pager dismantled beside him and the phone off the hook. The homemaker replaced the telephone receiver and tried the unit.	The Response Centre responded. The subscriber, who is partially paralyzed, was weak and dehydrated due to poor eating habits and had developed pneumonia. The ERS unit was of no help because the subscriber used it incorrectly.
12.	A subscriber required assistance being raised in bed because of problems with muscle spasms.	Response Centre contacted a responder who assisted the individual. A half hour later, the subscriber signalled for help again as the spasms continued. She reported feeling numb and weak, and the Response Centre summoned an ambulance.
13.	A subscriber had her leg stuck between her bed and wheelchair and could not move and signalled for assistance.	Response Centre contacted a responder who assisted the individual.

14. A subscriber became confused and signalled for help.	When the Response Centre called, the subscriber would not speak and pressed the button again. Response Centre contacted a responder who assisted the individual.
15. An alarm sounded.	When the Response Centre replied, the subscriber did not answer the phone. The Response Centre contacted a responder, who went to the individual's home. The subscriber is very hard of hearing and did not hear the telephone: the call had been a false alarm.
16. A subscriber signalled an emergency. When the Response Centre called, she complained of dizzy spells.	Response Centre summoned an ambulance. The subscriber has been hospitalized ever since.
17. A subscriber who uses a walker lost her balance and fell and signalled an emergency. She was able to answer the telephone when the Response Centre called, but needed assistance getting up off the floor.	Response Centre summoned an ambulance to help the responder lift the subscriber.

18.	Response Centre received an emergency signal and called the subscriber, but received no response to the telephone call.	Response Centre sent a responder who found that the subscriber was fine.

A P P E N D I X I

RESPONSES TO EVALUATION QUESTIONNAIRE

Analysis of Questionnaire Responses

The questionnaire together with a detailed summary of responses is provided in the appendix. Only data from subjects completing both testings is included. The findings of relevance for evaluating the impact of the ERS are presented here.

1. Question: "Is there someone who looks after you?"

Table 1

Percentage of each group answering ALWAYS or MOST OF THE TIME

	Pretest	3 months	change
ERS	50	39	-11
Control	27	45	+18

This result shows that the ERS group became somewhat more independent, while the Control group became more dependent on others over the three month period.

2. Question: "Do you have any chronic or recurring health problems which may require emergency attention?

Table 2

Percentage of each group answering YES

	Pretest	3 months	Change
ERS	63	58	+5
Control	74	84	-11

This result shows that among the individuals with ERS there was actually a perception of improved health, while among the Control group the opposite trend

appeared.

3. Question: "In the past 3 months, have you had any accidents, health emergencies or other problems where you needed assistance quickly?"

Table 3

Percentage answering YES

	Pretest	3 Months	Change
ERS	50	17	33
Control	42	42	0

Fewer individuals with the ERS reported an emergency over the 3 month period they had the ERS unit. This finding may indicate either that there were fewer incidents, possibly due to people being more relaxed, or that they were less likely to label an incident an emergency. In either case this finding supports the value of the ERS.

4. Question: "Have you considered moving out of your present home into a health care facility, or a senior apartment?"

Table 4

Percentage answering YES

	Pretest	3 Months	Change
ERS	36	42	+6
Control	21	37	+16

It is reassuring that the majority of both groups are still comfortable with living outside of institutions,

and there is only a slight trend for more of the control group to have changed in favour of this option. - -

5. Question: "Have you formally applied to a home for the aged?"

Table 5

Percentage answering YES

	Pretest	3 Months	Change
ERS	5	13	8
Control	5	6	1

Two more subjects in the ERS group have applied to homes for the aged. This is the only finding which is not consistent with a picture of positive changes resulting from the ERS. However this may not reflect a real change since 2 subjects in the ERS group did not answer this question on first testing, i.e. 21 out of 24 stated they had not applied on both occassions.

6. Question: "How often do you worry about having accidents or emergencies?"

Table 6

Percentage answering NEVER

	Pretest	3 Months	Change
ERS	41	58	+17
Control	42	33	-9

This finding indicates that over the 3 months more individuals in the ERS group report never worrying about accidents or emergencies, while over the same period,

the opposite trend appears in the control group.

7. Question: "In what ways do you think the ERS was or was not effective?" (Only asked of the ERS group and only at the 3 month testing).

Table 7

Percentage of answers in each category

Peace of mind/ reduced worry	71
No opinion	25
ERS is of no use	4

As expected, the vast majority of ERS recipients reported peace of mind or reduced worry.

8. Question: "How likely do you think it is that you will be hospitalized in the next 3 months?"

Table 8

Percentage responding that it is VERY or SOMEWHAT likely

	Pretest	3 Months	Change
ERS	25	29	4
Control	26	37	11

This is a slight tendancy for more individuals in the control group to be concerned about hospitalization in the near future.

Summary

The changes reported above are generally small, and would not satisfy statistical criteria for reliability. However, trends are with only one exception in the

direction of indicating that recipients have benefitted from the ERS. Notable benefits are that recipients now (a) rely less on others, (b) feel healthier, (c) experience fewer situations they would label as emergencies, and (d) are less likely to worry. Thus, these results suggest that ERS is achieving the desired effect. It should be kept in mind that the present report reflects changes over a relatively brief period (3 months), and a further follow up in another 6 months might indicate even more marked differences between the groups. Nevertheless, considering the present evidence there is sufficient basis for expressing confidence in the value of the ERS.

Additional Considerations

Only 4 individuals in the ERS group experienced an emergency in the 3 month period, providing little opportunity to evaluate its effectiveness in delivering assistance. As well only 2 of these used the ERS. One was hospitalized, and the other assisted at home. Of the other 2 cases, one, a diabetic, was assisted at home by family, the other received help from a neighbour for a problem that arose when she was out in the community, and which did not require follow up. A related issue is that when initially installed, various problems were encountered with false alarms and systems not working properly. While these problems are now resolved, it

would be extremely valuable to sample for a longer period of time before concluding that ERS actually results in better response to emergencies. So far, its benefits (as expected) have been primarily on "peace of mind".

A number of comments were received about what services these elderly people would like to see provided (eg. by Rainycrest). Since such services may affect decisions about whether to continue living independently, they are listed below. The number in brackets indicates the number of people making that suggestion.

-provide frequent visits to people with nobody to care.
-give haircuts
-beauticians provide permanents in home
-provide foot care (3)
-help with yard work (2)
-socializing with people of same age (3)
-some type of buddy system on a daily basis (3)
-car rides
-facilities in local community (3)
-bus service (including medical transportation) (5)
-lonely
-phone call or daily visit (2)
-check eyesight and hearing
-snow removal